

What is claimed is:

1. A method for rebooting a first bridge in a network, the network containing a plurality of bridges and operating according to a first state, the method
5 comprising:
 - a) sending notification to one or more second bridges in the network of the first bridge being scheduled for updating, thereby disturbing the first state;
 - b) updating said first network bridge;
 - c) restoring the first state of the network; and
10 d) sending notification to the one or more second bridges of the network that the updating of the first bridge has been completed.
2. The method of claim 1 wherein the step of sending notification further comprises the first bridge sending a special bridge protocol data unit (BPDU)
15 along a plurality of forwarding links connected to said first bridge.
3. The method of claim 2 wherein the special BPDU is selected from the group consisting of a normal spanning tree protocol configuration and a rapid spanning tree protocol configuration.
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4. The method of claim 3 wherein the special BPDU message for the normal STP configuration is (configBPDU).
5. The method of claim 3 wherein the rapid spanning tree protocol BPDU
25 has a message age set to a value that does not occur during normal RSTP operation.
6. The method of claim 5 wherein the value is MAX age + 1.
- 30 7. The method of claim 1 further comprising the step of the one or more second bridges initiating a condition of not expecting additional messages from the first bridge subsequent to the notification.

8. The method of claim 1 further comprising the step of disabling a control plane of the first bridge just prior to commencement of the updating.

9. The method of claim 1 wherein the step of restoring the first state of the
5 network further comprises reestablishing an original spanning tree that existed in the network prior to the update of the first bridge.

10. The method of claim 9 wherein the restoration of the spanning tree further comprises:

10 c1) retrieving a port state of each port of the first bridge.

11. The method of claim 10 wherein if the port states are retrieved via hardware, then the restoration further comprises:

15 c2) waiting for a predetermined period of time to receive new network messages.

12. The method of claim 10 wherein if the port states are retrieved via software, then no waiting period for new network messages occurs.

20 13. The method of claim 9 wherein the step of restoring the first state further comprises the first bridge blocking all of its ports and advertising itself as a root if a BPDU is received on more than one forwarding port.

25 14. The method of claim 7 wherein the initiated condition includes the one or more second bridges send self-generated configBPDU messages.

15. The method of claim 1 wherein the step of sending notification to other bridges of first bridge update completion further comprises the one or more second bridges receiving a normal BPDU from the first bridge.

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16. A computer readable medium containing a program which, when executed, performs an operation of rebooting a first bridge in a network, the

network containing a plurality of bridges and operating according to a first state, the operation comprising:

- a) sending notification to one or more second bridges in the network of the first bridge being scheduled for updating, thereby disturbing the first state;
- 5 b) updating said first network bridge;
- c) restoring the first state of the network updated; and
- d) sending notification to the one or more second bridges of the network that the updating of the first bridge has been completed.

10 17. The computer readable medium of claim 16 wherein the step of sending notification further comprises the first bridge sending a special bridge protocol data unit (BPDU) along a plurality of forwarding links connected to said first bridge.

15 18. The computer readable medium of claim 16 wherein the special BPDU is selected from the group consisting of a normal spanning tree protocol configuration and a rapid spanning tree protocol configuration.

 19. The computer readable medium of claim 18 wherein the special BPDU
20 message for the normal STP configuration is (configBPDU).

 20. The computer readable medium of claim 18 wherein the rapid spanning tree protocol BPDU has a message age set to a value that does not occur during normal RSTP operation.

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 21. The computer readable medium of claim 20 wherein the value is MAX age + 1.

 22. The computer readable medium of claim 16 further comprising the step
30 of the one or more second bridges initiating a condition of not expecting additional messages from the first bridge subsequent to the notification.

23. The computer readable medium of claim 16 further comprising the step of disabling a control plane of the first bridge just prior to commencement of the updating.

5 24. The computer readable medium of claim 16 wherein the step of restoring the state of the network further comprises reestablishing an original spanning tree that existed in the network prior to the update of the first bridge.

25. The computer readable medium of claim 16 wherein the step of sending
10 notification to other bridges of first bridge update completion further comprises the one or more second bridges receiving a normal BPDU from the first bridge.

26. An apparatus for updating a network bridge in a plurality of
interconnected network bridges operating according to a first state comprising:
15 a forwarding plane adapted to provide physical control of the states of a plurality of ports in the bridge; and
a control plane adapted for issuing and executing instructions that control the physical action of the forwarding plane including:
a) sending notification to one or more second bridges in the network of
20 the first bridge being scheduled for updating, thereby disturbing the first state;
b) updating said first network bridge;
c) restoring the first state of the network; and
d) sending notification to the one or more second bridges of the network that the updating of the first bridge has been completed.

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27. The apparatus of claim 26 wherein the step of sending notification further comprises the first bridge sending a special bridge protocol data unit along a plurality of forwarding links connected to said first bridge.